IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CALLAWAY GOLF COMPANY,	)	
Plaintiff,	)	
v.	)	C.A. No. 06-91(SLR)
ACUSHNET COMPANY,	)	
Defendant.	)	

DECLARATION OF JEFFREY L. DALTON

I, Jeffrey L. Dalton, hereby state as follows:

1. I have worked in the golf ball industry at or with the Acushnet Company since 1989 in the fields of golf ball design and manufacture, and hold a Bachelor's of Science degree in Chemistry from the University of Hartford in Connecticut. Before joining Acushnet, I worked at Rogers Corp from 1977 to 1982, where I was an R&D Chemist assigned to the development of injection and compression moldable compounds. From 1982 to 1988 I worked at Gentex Corporation as a Process Engineering Manager, developing coatings for ophthalmic lenses and managing the process improvement of the polycarbonate injection molding operation.

2. When I began working at Acushnet in 1989, I was a Project Development Engineer, and my duties included the development of a balata-covered golf ball known as the Titleist Tour 392. In 1989 I was also assigned to supervise the golf ball testing team. I reassumed my Product Development responsibilities in 1990 and was promoted to

Project Manager in 1991, when my primary assignment was the development of the Titleist Tour Balata golf ball.

3. From 1993 to 1995, I served as the Technical Manager at Acushnet's Ball Plant 1, where my duties included manufacturing quality control for all the balls manufactured at Ball Plant 1 which included balata, ionomer, and polyurethane covered golf balls. I also continued to manage product development for all golf balls manufactured at Ball Plant 1, and some that were manufactured at Ball Plant II.

4. In 1996, I returned to the Research and Development group and was promoted to Director of Product Development and was responsible for development of all Titleist, Pinnacle (and later) Cobra branded golf balls. The products that my team and I developed between 1996 and 2000 included wound balata, ionomer, and polyurethane covered balls, ionomer covered two-piece balls, as well as technologies such as double cover balls with non-ionomeric cover layers, dual core balls, and balls with thin cover layers. My team and I also developed (in cooperation with Titleist manufacturing engineers) the processes for manufacturing these golf balls.

5. In 2000 I was promoted to the position of Vice President of Product Development. My team and I developed golf balls including the Titleist Pro V1, ProV1x, and NXT Tour, as well as all the other Titleist and Pinnacle products manufactured between 2000 and 2004. In 2004, I was promoted to the position of Vice-President of Intellectual Property.

6. In March of 2008 I retired from full time employment with the Acushnet Company, but still consult with the company from time to time.

7. During my time at Acushnet, I received about 68 patents related to a variety of golf technologies including golf ball designs, materials for golf balls, golf ball aerodynamics, golf ball dimple patterns, and golf ball manufacturing processes.

8. In the course of my career, I became very familiar with the golf balls manufactured by Acushnet and its competitors, and with the various manufacturing processes that could be utilized to produce golf balls.

9. In 2007, at the direction of Dr. William MacKnight, I created several golf balls pursuant to disclosures of prior art asserted by Acushnet in this litigation. One such golf ball was made pursuant to the disclosures of U.S. Patent No. 4,431,193 to Nesbitt incorporating U.S. Patent No. 4,274,637 to Molitor ("the Nesbitt/Molitor patent"). This ball construction was identified as "BALL_4" in Dr. MacKnight's Declaration.

10. The core of the BALL_4 construction had the following composition:

Material	**Weight**
Polybutadiene (BR-1220)	70.70
Polybutadiene (Taktene 220)	29.30
Zinc Diacrylate	31.14
Zinc Oxide	6.23
Zinc Stearate	20.15
Limestone	17.58
Ground Flash	20.15
Blue Masterbatch	0.012
Luperco 231 XL (now Varox 231XL)	0.89

11. BALL_4 used for its inner cover layer the ionomer blend composition set forth in Table 2 of the of the Molitor '637 patent:

Material	**Parts**
Surlyn 1605 (now 8940)	88.00
Surlyn 1557 (now 9650)	17.40
TiO2 Master Batch A	35.20
Blowing Agent Master Batch B	2.32

12. BALL_4 used for its outer cover layer the thermoplastic polyurethane composition set forth in Table 10 of the Molitor '637 patent:

Material	**Parts**
Estane 58133	99.7
Ficel EPA	0.3

13. BALL_4 was made with a core diameter of 1.495 inches, an inner cover layer thickness of 0.035 inches, and an outer cover layer of 0.0575 inches. This is consistent with the disclosures in the Nesbitt patent. I created twelve (12) samples of that ball construction for testing.

14. I accompanied Dr. MacKnight to Plastics Tech Plastics Technology Laboratories, Inc. (PTLI), an independent test lab, to request testing of the outer cover layer Shore D hardness of the BALL_4 samples, as measured "on the ball." The samples of BALL_4 had an average "on the ball" outer cover Shore D hardness of 61.0. The 2007 PTLI report is attached hereto as Exhibit A.

15. I was recently instructed to develop a test protocol to demonstrate what effect, if any, varying the choices for the core formulation and inner cover thickness of the BALL_4

construction would have on the resulting "on the ball" Shore D hardness values for the outer cover layer.

16. I formulated what is referred to in the industry as a "matrix test" to aid in this analysis. A matrix test measures the effect that changing certain variables has on another parameter of interest. In this case, the parameter of interest was the "on the ball" Shore D hardness of BALL_4's outer cover layer.

17. For the matrix test, I developed three different core formulations: a very soft core; a medium core; and a very hard core. I adjusted the hardness of the core formulations by varying the amount of zinc diacrylate ("ZDA") used in the core formulation set forth above. ZDA is a crosslinking agent that is commonly used in the industry to vary the target hardness of solid construction golf ball cores. Increasing the amount of ZDA in a core formulation increases the hardness of the core. Conversely, decreasing the amount of ZDA in a core formulation decreases the hardness of the core. I used the following specific core formulations to produce the soft, medium, and hard cores:

Soft Core	**Medium Core**	**Hard Core**
BR-1220 – 70.70	BR-1220 – 70.70	BR-1220 – 70.70
Taktene 220 – 29.30	Taktene 220 – 29.30	Taktene 220 – 29.30
ZDA – 15 pph	**ZDA – 31 pph**	**ZDA – 45 pph**
Zinc Oxide – 6.23 pph	Zinc Oxide – 6.23 pph	Zinc Oxide – 6.23 pph
Zinc Stearate – 20.15 pph	Zinc Stearate – 20.15 pph	Zinc Stearate – 20.15 pph
Limestone – 17.58	Limestone – 17.58	Limestone – 17.58
Ground Flash – 20.15	Ground Flash – 20.15	Ground Flash – 20.15
Yellow Masterbatch – 0.12	Blue Masterbatch – 0.12	Red Masterbatch – 0.12
Luperco 231XL – 0.89 (now Varox 231XL)	Luperco 231XL – 0.89 (now Varox 231XL)	Luperco 231XL – 0.89 (now Varox 231XL)

The "Medium Core" formulation identified above is the same core formulation that was used in the BALL_4 construction balls tested in 2007.

18. To evaluate the effects of different inner cover layer thicknesses on "on the ball" Shore D hardness of the outer cover layer, I selected three different inner cover layer thicknesses: a very thin cover, an intermediate thickness cover, and a very thick cover. I chose the thicknesses for these cover layers based upon the disclosure of Nesbitt, which states that the inner cover layer should be between 0.020 and 0.070 inches in thickness (col. 3, lines 19-22). Thus, for the thin inner cover layer, I used a thickness of 0.020 inches, for the medium thickness inner cover layer I used a thickness of 0.035 inches, and for the thick inner cover layer I used a thickness of 0.070 inches.

19. Since the outer cover layer thickness would stay fixed at 0.0575 inches (as disclosed by Nesbitt), a change in the inner cover layer thickness requires a corresponding change in the core diameter of the golf ball, to ensure that the overall size of the golf ball is fixed. Thus, I also made three different sizes of each core by using a glebar machine to grind the cores down to the appropriate size. Thus, for each of the three core formulations, I produced Core Sets with the following diameters:

    - 1.525" (for the balls with a 0.020 inch inner cover layer thickness);
    - 1.495" (for the balls with a 0.035 inch inner cover layer thickness); and
    - 1.425" (for the balls with a 0.070 inch inner cover layer thickness)

    Thus, I produced a total of nine different Core Sets.

20. I sent six samples of each of these Core Sets to James Galipeau at Intertek Plastics Technology Laboratories (formerly PTLI) ("Intertek") for Intertek to measure the Shore D hardness of the cores. Intertek was instructed to measure the Shore D hardness according to ASTM test D-2240, except that the hardness was to be measured on the surface of the cores. Five different Shore D hardness measurements were performed on

each sample core. These measurements were averaged to arrive at a Shore D hardness value for each sample core. The Shore D hardness values for each core in each Core Set were then averaged to determine the Shore D hardness for each Core Set. The results of this testing are set forth below:

Core Set	**Core Diameter**	**Core Formulation**	**Average Shore D Hardness**
1	1.525"	Soft	32.4
2	1.495"	Soft	32.2
3	1.425"	Soft	33.2
4	1.525"	Medium	45.8
5	1.495"	Medium	45.4
6	1.425"	Medium	46.2
7	1.525"	Hard	56.2
8	1.495"	Hard	55.6
9	1.425"	Hard	56.2

21. A copy of Intertek's test results are attached hereto as Exhibit B. The results for each core type are reported under the "Core ID" heading for each Core Set. For example, the cores under Set 1 correspond to the samples of Core Set 1, the cores under Set 2 correspond to the samples of Core Set 2, etc.

22. In my experience, the "Soft" cores specified above are softer (in Shore D hardness or in Atti Compression) than any core that would have actually been used in a commercial golf ball in the mid-90's. Likewise, the "Hard" cores are harder (in Shore D hardness or in Atti Compression) than any core that would have actually been used in a commercial golf

ball in the mid-90's. Thus, these three cores are representative of the full range (in terms of hardness) of cores that would have practically been used in golf balls in 1995.

23. Using the Core Sets described above, I created nine complete golf balls using the same inner and outer cover layer compositions that were used in the BALL_4 construction:

Ball Designation	**Core Formulation**	**Inner Cover Thickness**
Ball Set 1	Soft	0.020
Ball Set 2	Soft	0.035
Ball Set 3	Soft	0.070
Ball Set 4	Medium	0.020
Ball Set 5	Medium	0.035
Ball Set 6	Medium	0.070
Ball Set 7	Hard	0.020
Ball Set 8	Hard	0.035
Ball Set 9	Hard	0.070

24. After the golf balls were completed, I sent samples of each ball to James Galipeau at Intertek for measurement of the Shore D hardness of their outer cover layers "on the ball." The testing was done according to ASTM test D-2240 except that hardness was measured on the surface of the cover layer of the golf balls.

25. Specifically, I sent six samples of Ball Sets 2-9 to Intertek for testing. For Ball Set 1, I was able to prepare only two samples because the combination of its large soft core (softer than any commercial ball would be) and very thin inner cover layer made the outer cover of these balls difficult to mold because the balls deformed somewhat in the mold. As a result, I produced only two samples of Ball Set 1, rather than six. All samples were sent to Intertek for testing.

26. Intertek performed five Shore D hardness measurements on the outer cover layer surface of each of the test balls. These measurements were averaged to arrive at a Shore D hardness value for each sample ball. The Shore D hardness values for each ball in each Ball Set were then averaged to determine the Shore D hardness for each Ball Set. The results of Intertek's Testing of the "on the ball" Shore D hardness of the outer cover layers of these balls are set forth below:

Ball Designation	**Core Formulation**	**Inner Cover Thickness**	**Average Shore D Hardness**
Ball Set 1	Soft	0.020	60.8
Ball Set 2	Soft	0.035	60.2
Ball Set 3	Soft	0.070	60.0
Ball Set 4	Medium	0.020	61.5
Ball Set 5	Medium	0.035	60.7
Ball Set 6	Medium	0.070	60.3
Ball Set 7	Hard	0.020	61.6
Ball Set 8	Hard	0.035	60.0
Ball Set 9	Hard	0.070	59.8

27. The raw data from Intertek's tests is also set forth in the Intertek test report attached as Exhibit B. The results for each Ball Set are reported under the "Ball ID" heading for each set. For example, the Balls under Set 1 correspond to the samples of Ball Set 1, the Balls under Set 2 correspond to the samples of Ball Set 2, etc.

28. As shown by the Intertek testing data above, the "on the ball" Shore D hardness measurements for the outer cover layers of these golf balls are very similar to those of the original BALL_4 created in 2007. The original BALL_4 had an average outer cover "on

the ball" Shore D hardness of 61.0. In comparison, average outer cover Shore D hardness measurements for the new Ball Sets ranged from 59.8 (Ball Set 9) to 61.6 (Ball Set 7).

29. It is apparent from the test set forth above that the choice of core formulation and inner cover layer thickness has a negligible impact on the "on the ball" outer cover Shore D hardness of golf balls made using an inner cover layer of Nesbitt/Molitor's ionomer blend composition and an outer cover layer of Nesbitt/Molitor's thermoplastic polyurethane composition.

Dated: Dec 1, 2009

Jeffrey L. Dalton

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CERTIFICATE OF SERVICE

I, David E. Moore, hereby certify that on December 1, 2009, the attached document was electronically filed with the Clerk of the Court using CM/ECF which will send notification to the registered attorney(s) of record that the document has been filed and is available for viewing and downloading.

I further certify that on December 1, 2009, the attached document was Electronically Mailed to the following person(s):

Thomas L. Halkowski
Fish & Richardson P.C.
222 Delaware Avenue, 17th Floor
P.O. Box 1114
Wilmington, DE 19899-1114
halkowski@fr.com

Frank E. Scherkenbach
Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110-2804
scherkenbach@fr.com

Robert A. Denning
David S. Shuman
W. Chad Shear
Fish & Richardson P.C.
12290 El Camino Real
San Diego, CA 92130
denning@fr.com
shuman@fr.com
shear@fr.com

Jonathan J. Lamberson
Christina D. Jordan
Craig R. Compton
Fish & Richardson P.C.
500 Arguello Street, Suite 500
Redwood City, CA 94063
lamberson@fr.com
cjordan@fr.com
compton@fr.com

/s/ David E. Moore
Richard L. Horwitz
David E. Moore
Potter Anderson & Corroon LLP
Hercules Plaza – Sixth Floor
1313 North Market Street
Wilmington, DE 19899-0951
(302) 984-6000
rhorwitz@potteranderson.com
dmoore@potteranderson.com

721869 / 30030